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# THE IMPACT OF THE CORONA PANDEMIC AND PREVENTIVE MEASURES FROM IT ON THE LANGUAGE DEVELOPMENT OF CHILDREN IN JORDAN

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## ABSTRACT

*Language serves as a crucial tool for communication, encompassing various aspects of conveying ideas, emotions, and cultural nuances. The COVID-19 pandemic introduced unprecedented restrictions on social interactions, potentially affecting language development, particularly in peer discourse. The pandemic's impact on education and remote learning has raised concerns about children's linguistic growth, especially among those in early developmental stages. This research aims to examine the impact of the COVID-19 pandemic and related preventive measures on the language development of children in Jordan. It seeks to understand how factors like school closures, remote learning, and social restrictions may have influenced linguistic skills. The study utilized a questionnaire to collect data from parents of children aged four to eight in Jordan. The sample included 1236 children. The questionnaire, consisting of 18 inquiries, was designed to assess the linguistic development of children during the pandemic. Data analysis aimed to reveal any patterns or changes in language skills. The analysis indicated that the pandemic's impact on children's language development in Jordan was not significant. Factors contributing to this included strong family linguistic exposure due to household size, close-knit communities facilitating social interactions, educated mothers' active involvement in language nurturing, and the adoption of electronic learning platforms. The research findings based on parental perception suggest that the COVID-19 pandemic did not have a substantial negative impact on children's language development in Jordan. The country's unique socio-cultural factors, such as family dynamics and educational initiatives, likely played a protective role. This study sheds light on the resilience of language development within specific contexts during challenging times.*

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## 1. INTRODUCTION

Language is one of the most important means of communication between individuals and groups, through which ideas, emotions, customs, traditions, symbols, and gestures are conveyed. It is well-known that language development requires social interaction, which is the main support for language. The restrictions imposed by the COVID-19 pandemic have impacted social interaction, affecting what is known as peer discourse, where conversation skills, role-taking, and understanding implicit meanings behind speaker's words are enhanced (Hindawi, 2023). Undoubtedly, the COVID-19 pandemic has had a significant impact on the world due to widespread lockdowns, including the closure of schools (Al-Shdaifat, 2021). This has particularly affected children in the early stages of development, limiting their access to educational resources. The shift to remote learning, while necessary for safety, has brought about challenges in maintaining the quality of education (Shehata & Al-Barashidiyah, 2022).

The digital divide became more apparent as some students lacked access to the necessary technology and internet connectivity for remote learning. This has exacerbated educational disparities, with many children falling behind in their studies. In addition, the absence of in-person classroom interactions has hindered the development of language skills, especially for young learners who rely on face-to-face communication for language acquisition. Furthermore, the psychological toll of the pandemic, including social isolation and anxiety, has also affected language development. Children and adolescents have experienced increased stress levels, which can hinder their ability to engage in meaningful conversations and develop language proficiency.

As we look to the future, it is crucial to address these challenges and develop strategies to support both education and language development in the post-pandemic world. This includes investing in technology infrastructure, mental health support for students, and innovative approaches to teaching that prioritize social interaction and language growth. In conclusion, the COVID-19 pandemic has not only disrupted education but has also posed challenges to the development of language skills, particularly in young learners. As we navigate the recovery phase, it is imperative that we prioritize the holistic development of children, including their linguistic abilities, to ensure a brighter future for all.

A study conducted by a British institution indicated that up to 1.5 trillion children have experienced a decline in their speaking and comprehension skills due to the disruption caused by the COVID-19 pandemic. The World Health Organization also declared the pandemic as a threat to humanity. School closures worldwide led to the promotion of remote learning and the creation of educational platforms, with the observation that infrastructure is lacking in many countries, particularly impoverished ones. Within individual countries, there is significant variation in infrastructure and economic conditions, impacting education overall and children's linguistic development in particular (Ali, 2022).

The COVID-19 pandemic has affected educational systems globally, resulting in school closures. This prompted rapid adoption of remote learning (Aldawash & Al-Hadhrami, 2023) particularly in Jordan, as an alternative means to ensure the continuity of the educational process (Affouneh, Salha and Khlaif, 2020)..

Some studies have indicated that during the pandemic, in face-to-face education, there was a noticeable impact of masks worn by teachers and students on children's linguistic development. These masks obscured speech signals (articulation of speech sounds and their attributes) and gestures, reducing high-frequency speech components. Children faced several challenges, as these masks hindered their ability to comprehend speech, as they rely on lip-reading. Consequently, their information processing declined rapidly, despite their urgent need to enhance it. Additionally, masks disrupted social signals conveyed through facial expressions, significantly weakening conversation and social skills (Hindawi, 2023), However, the education system in Jordan heavily relies on families, which has mitigated the impact of the pandemic on children's education. Additionally, widespread availability of internet, phones, and computers, especially among mothers with high education rates, further reduced the pandemic's impact on children's language development in this context; many studies have examined the impact of the COVID-19 pandemic on various aspects of the world, including economic, tourism, and educational dimensions. However, our focus in this study revolves around the pandemic's effect on language development.

While several studies have examined the general impact of the COVID-19 pandemic on children's mental health, education, and social development globally, there is a noticeable lack of focused research on how pandemic-related preventive measures—such as social distancing, school closures, and increased screen time—have specifically affected

language development in early childhood. This gap is particularly evident in the context of developing countries, including Jordan, where linguistic, cultural, and socioeconomic factors may influence developmental outcomes differently than in Western contexts. To date, no comprehensive study has investigated the specific effects of the COVID-19 pandemic on the language development of children in Jordan. This study aims to fill that gap by exploring both the direct and indirect impacts of the pandemic and associated preventive measures on language acquisition and development in Jordanian children aged four to eight.

## 2. LANGUAGE

Language stands as one of humanity's most essential and remarkable tools for conveying a vast spectrum of information, ideas, emotions, and experiences between individuals (Al-Ashawi & Al-Haj, 2004). It is the very essence of our ability to connect, share, and understand one another. Language can be defined as a structured system of conventional symbols, words, and sounds that society employs to transmit messages between communicators (Reed, 2011). In its various forms, language is the lifeblood of human interaction and knowledge transfer.

Verbal communication, in particular, stands out as the most straightforward and rapid means of linguistic expression. Unlike other communication methods that may require external tools such as paper and pen for writing or intricate hand gestures for sign language, spoken language has the unique attribute of immediacy. It thrives on the spoken word, where thoughts and emotions can be conveyed instantly, without the need for intermediaries. What makes spoken language even more remarkable is its ability to transcend physical barriers. Unlike sign language, which relies on manual gestures and visual contact between the sender and receiver, spoken language breaks through these limitations. It enables individuals to share their thoughts and feelings through a medium that transcends time and space. From an educational and human perspective, language is much more than just a means of communication. It is a system of arbitrary symbols

that serves as the bedrock of human civilization. It is through language that cultures are preserved, stories are told, and knowledge is passed down through generations (AbuEswailem & Al-Ouidi, 2019). Language shapes our thoughts and, in turn, our worldviews. It is the vessel through which we explore the depths of science, philosophy, and art.

Moreover, language is not static; it is a living entity that evolves alongside society. As new concepts emerge and cultures intermingle, languages adapt and expand to encompass these changes. This dynamism ensures that language remains a vibrant and ever-evolving tool for human expression and understanding. In conclusion, language is more than just a mode of communication; it is a cornerstone of human civilization, a conduit for ideas, and a bridge that connects us across time and space (Al-Ashawi & Al-Haj, 2004; Reed, 2011; AbuEswailem & Al-Ouidi, 2019). Its importance in our lives cannot be overstated, and its beauty lies in its capacity to evolve and adapt, ensuring its enduring relevance in an ever-changing world.

### 2.1. Stages of Normal Language Development in Children

Before delving into identifying the presence of language disorders or language delays in children, it is essential to understand the stages of normal language development in children. Based on this understanding, the linguistic growth of children undergoing assessment or treatment is compared to the stages of typical development to determine the extent of language delay or linguistic disorder. Speech in children typically begins during the first year of life, with the initial stages involving the production of various sounds using speech organs at the age range of 4 to 9 months. These stages are known as "cooing" and "babbling." Subsequently, children progress to producing sounds as responses to environmental events, eventually assigning meaningful and functional value to these sounds in their lives (Min & Wah, 2011).

Below are the stages of normal language development in children from birth to 5 years, as outlined by the American Speech-Language-Hearing Association (ASHA).

*Table 1*

| Hearing and Understanding | Talking | Hearing and Understanding | Talking |
|---|---|---|---|
| **Birth–3 Months** | | **4–6 Months** | |
| Startles at loud sounds. Quiets or smiles when you talk. Seems to recognize your voice. Quiets if crying. | Makes cooing sounds. Cries change for different needs. Smiles at people. | Moves their eyes in the direction of sounds. Responds to changes in your tone of voice. Notices toys that make sounds. Pays attention to music. | Coos and babbles when playing alone or with you. Makes speech-like babbling sounds, like pa, ba, and mi. Giggles and laughs. Makes sounds when happy or upset. |
| **7 Months–1 Year** | | **One to Two Years** | |

| | | | |
|---|---|---|---|
| Turns and looks in the direction of sounds. Looks when you point. Turns when you call their name. Understands words for common items and people—words like cup, truck, juice, and daddy. Starts to respond to simple words and phrases, like "No," "Come here," and "Want more?" Plays games with you, like peek-a-boo and pat-a-cake. Listens to songs and stories for a short time. | Babbles long strings of sounds, like mimi upup babababa. Uses sounds and gestures to get and keep attention. Points to objects and shows them to others. Uses gestures like waving bye, reaching for "up," and shaking his head no. Imitates different speech sounds. Says 1 or 2 words, like hi, dog, dada, mama, or uh-oh. This will happen around their first birthday, but sounds may not be clear. | Points to a few body parts when you ask. Follows 1-part directions, like "Roll the ball" or "Kiss the baby." Responds to simple questions, like "Who's that?" or "Where's your shoe?" Listens to simple stories, songs, and rhymes. Points to pictures in a book when you name them. | Uses a lot of new words. Uses p, b, m, h, and w in words. Starts to name pictures in books. Asks questions, like "What's that?", "Who's that?", and "Where's kitty?" Puts 2 words together, like "more apple," "no bed," and "mommy book." |
| **Two to Three Years** | | **Three to Four Years** | |
| Understands opposites, like go–stop, big–little, and up–down. Follows 2-part directions, like "Get the spoon and put it on the table." Understands new words quickly. | Has a word for almost everything. Talks about things that are not in the room. Uses k, g, f, t, d, and n in words. Uses words like in, on, and under. Uses two- or three- words to talk about and ask for things. People who know your child can understand them. Asks "Why?" Puts 3 words together to talk about things. May repeat some words and sounds. | Responds when you call from another room. Understands words for some colors, like red, blue, and green. Understands words for some shapes, like circle and square. Understands words for family, like brother, grandmother, and aunt. | • Answers simple who, what, and where questions. Says rhyming words, like hat–cat. Uses pronouns, like I, you, me, we, and they. Uses some plural words, like toys, birds, and buses. Most people understand what your child says. Asks when and how questions. Puts 4 words together. May make some mistakes, like "I goed to school." Talks about what happened during the day. Uses about 4 sentences at a time. |
| **Four to Five Years** | | **Reference** | |
| Understands words for order, like first, next, and last. Understands words for time, like yesterday, today, and tomorrow. Follows longer directions, like "Put your pajamas on, brush your teeth, and then pick out a book." Follows classroom directions, like "Draw a circle on your paper around something you eat." Hears and understands most of what they hear at home and in school. | Says all speech sounds in words. May make mistakes on sounds that are harder to say, like l, s, r, v, z, ch, sh, and th. Responds to "What did you say?" Talks without repeating sounds or words most of the time. Names letters and numbers. Uses sentences that have more than 1 action word, like jump, play, and get. May make some mistakes, like "Zach gots 2 video games, but I got one." Tells a short story. Keeps a conversation going? Talks in different ways, depending on the listener and place. Your child may use short sentences with younger children. They may talk louder outside than inside. | https://www.asha.org/public/speech/development/0 ↗ American Speech-Language-Hearing Association (ASHA 1982) | |

## 2.2. Language Components.

Language is comprised of five fundamental elements:

Phonology: This system dictates the patterns and arrangements of phonemes within a language, determining how they can be linked. Each language is composed of a finite set of phoneme units, each lacking individual meaning.

Syntax: Governing the word order within sentences, this system dictates how words are structured in a sentence. For instance, in Arabic, the phrasal verb is constructed as verb + subject + object, whereas in English, the sentence begins with the subject and is followed by the verb.

Morphology: This system manages the rules for word derivation and the use of inflectional markers, such as plurals, duals, verb tenses, pronouns, subject nouns, object nouns, and instrumental nouns. It is composed of groups of phonemic units that possess functions or convey meanings (morphemes).

Semantics: Often referred to as the linguistic inventory, semantics is responsible for enriching linguistic output and interpreting expressions, drawing from both vocabulary and sentence structures.

Pragmatics: This component enables the use of language for social functions, acting as a crucial

driver for the other language elements. Its application varies based on social and cultural acceptability within different environments; an expression may be acceptable in one context but not in another (Dawayda & Khalil, 2011; Abu Nabaa, 2010; Zureikat, 2007; Owens, Farinella & Metz, 2015; Gleason & Rather, 2024; Abdullah, Dabney-Fekete & Ceglédi, 2024).

## 2.3. Language Acquisition

Most children acquire language effortlessly and without much effort. However, some may face difficulties in learning, understanding, and using the language they hear around them. These children may have language disorders, which can put them at significant risk for language-related learning problems, social issues, and behavioral challenges (Johnson, 2007).

Several scholars have attempted to explain language acquisition in children, each offering their perspective and theories based on the approaches they adopt. **Here is an overview of the viewpoints of some of these scholars:**

1. Behavioral Approaches:
2. Linguistic approaches.
3. Interactionist Approaches.
4. The Cognitive Theory.

## 2.4. Language delay

Language delay is considered one of the most significant challenges that impact an individual's life in general. When a person experiences language delay, their opportunities for social interaction and communication with others diminish, leading to a higher likelihood of social withdrawal and negative effects on their mental well-being. Given the close relationship between academic abilities, school education, and language, any loss or delay in language acquisition can inevitably result in academic weaknesses for the child, consequently limiting their available opportunities to pursue education and lead a normal, healthy life (Senft, 2016).

Language delay is defined as the failure of a child's language to develop in accordance with their chronological age, following the stages of language growth. Language delay falls under the category of language disorders, which in turn are classified as communication disorders (McLaughlin, 2011). Language delay can be detected early by monitoring the child's linguistic development and comparing it to the normal language growth charts for children.

**Research questions**
**The research attempts to answer the following main question:**

• Is there an impact of Corona pandemic and preventive measures from it on the language development of children in Jordan?
• Does the impact of the pandemic on language development differ by age group (e.g., toddlers vs. preschoolers)?
• Are there gender-based differences in how the pandemic has affected children's language development?

# 3. METHOD

## 3.1. Study Design

A questionnaire was designed and directed towards parents of children aged four to eight years old to study the impact of the COVID-19 pandemic and the accompanying preventive measures, such as lockdowns, on the linguistic development of children. This age group was chosen to ascertain that children experienced the pandemic during the critical language acquisition period, which typically spans from two to six years of age.

The research sample included (1236) children from all Jordan. The results of this questionnaire were analyzed to extract insights into the linguistic growth of Jordanian children during the COVID-19 pandemic period.

## 3.2. Research Instrument

In an effort to discern the influence of the COVID-19 pandemic on children's language development, the researchers developed a questionnaire to elucidate language progression as perceived by parents. The questionnaire comprised a set of (18) inquiries, the responses to which were subsequently analyzed by the researchers to derive the findings.

The questionnaire was piloted prior to full deployment. A small sample of thirty parents of children in the target age group was invited to complete the initial version. Based on their feedback, several items were revised for clarity and relevance. Additionally, content validity was ensured through expert review by six specialists in speech-language pathology and child development.

# 4. RESULTS

The results of the questionnaire analysis revealed that 92.3% of the sample individuals had experienced the period of the COVID-19 pandemic in Jordan, while 7.7% of the sample individuals had experienced the pandemic in neighboring countries, predominantly Palestine, Saudi Arabia, Qatar, and Kuwait. The number of children per family in the sample ranged from one child to six children.

The sample of children consisted of 60.9% females and 39.1% males. The questionnaire was predominantly filled out by mothers (64.1%), while the remaining responses were provided by fathers, uncles, aunts, grandfathers, and grandmothers, both male and female.

The questionnaire findings indicated that 37.6% of the sample children had been infected with the COVID-19 virus, which corresponds to approximately 465 children, while 62.4% of them had not been infected, totaling around 771 children.

Furthermore, the questionnaire revealed that 76.7% of the sample individuals, which amounts to 948 individuals, did not notice any speech or language-related problems in their children during the pandemic. In contrast, 23.3% of the sample individuals, equivalent to 288 individuals, reported the presence of speech and language issues in the specific child mentioned in the questionnaire, as shown in figure (1).
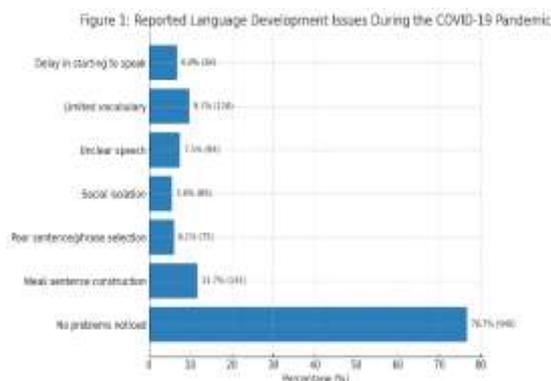


*Figure 1*

The results were based on the perspectives of parents who were directed to complete the questionnaire, while specific questions were answered to illustrate these findings. Additionally, a comparison was made between the language development of the child in question and their siblings within the same family. The responses indicated that 77.2% of the sample individuals did not observe any differences in language development between their child and their siblings. However, 22.8% of the sample individuals noted differences in language development compared to their child's siblings.

The reported problems that appeared in children during this period were primarily focused on sentence structure weakness, accounting for 11.7% of the positive responses (144 children out of 288). Other reported issues included social isolation (5.6%), poor choice of phrases and sentences (6.1%), delayed speech initiation (6.8%), production of unintelligible speech (7.5%), and limited vocabulary (9.7%).

Parents also noted some social problems related to language in their children. Approximately 9.7% of the children with speech and language problems were observed to avoid speaking with others, while 13.3% of them conversed with a limited number of people. Furthermore, 9% of these children could not differentiate between masculine and feminine, as shown in table (1).

*Table 2: Observed Social Behavior Changes After The COVID-19 Pandemic (N = 1236).*

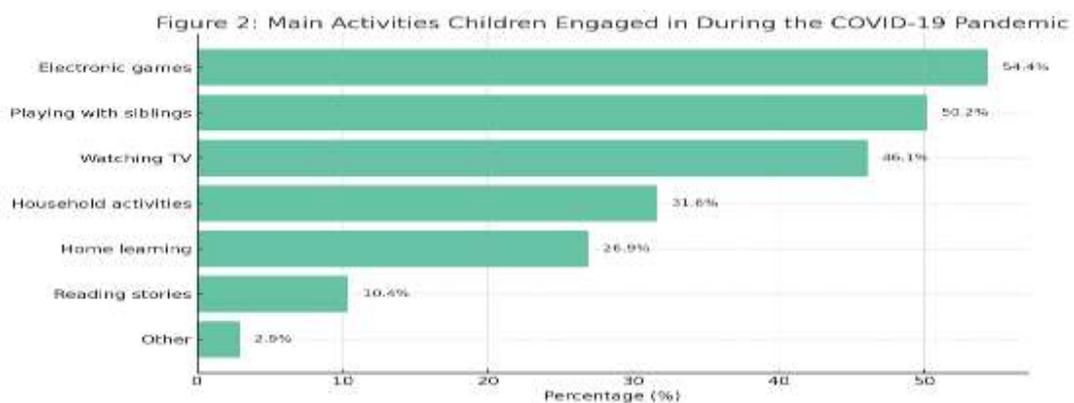| Observed Social Behavior After Pandemic | Percentage (%) | Frequency (n) |
|---|---|---|
| Avoiding conversations | 9.7% | 120 |
| Inability to differentiate communication styles between people | 9.0% | 111 |
| Speaking with a limited number of people | 13.3% | 164 |
| No changes noticed before and after the pandemic | 73.1% | 904 |



*Figure 2*

During this period, children spent varying amounts of time on these activities, ranging from less than an hour to more than six hours per day. Specifically, 3.9% spent less than an hour, 16% spent

one to two hours, 27.7% spent two to four hours (the highest percentage), 23.5% spent four to six hours, and 17.5% spent more than six hours as shown in figure (3).
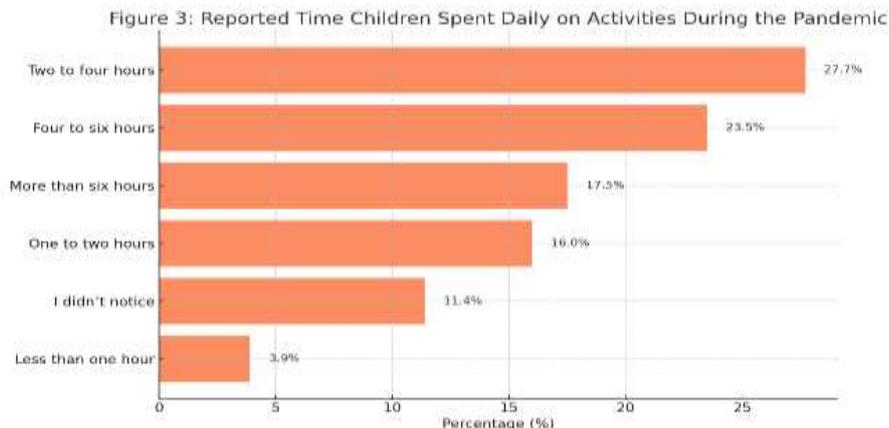


*Figure 3*

As for the impact of the pandemic on children's academic performance, 28.2% of the sample individuals (349 children) were younger than school age. Approximately 22.6% of the children were unaffected by the pandemic on their academic performance, while 22.6% were mildly affected. A more significant impact was observed on 18% (222 children) of the sample individuals. Additionally, 8.7% did not notice the impact on their children's academic performance.

Among the sample, 23.3% (288 children) were found to have language problems during the pandemic. Only 17% (210 children) were evaluated, with 7.5% assessed speech and language specialists. The remaining 82.3% of the individuals did not have their children evaluated. Among the evaluated children, 3.9% had language delays, 1% had speech sound problems, 0.7% had speech fluency disorders, 1.7% had social problems, and 5.8% had reading and writing problems, as shown in figure (4).
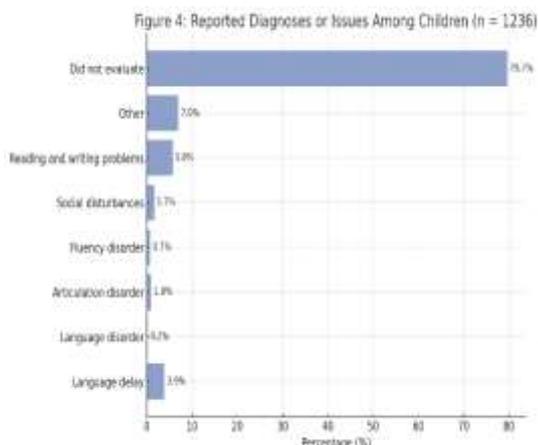
When asked about other family members experiencing speech and language problems apart from the child, 88.6% of the sample individuals reported no such problems within the family, while 11.4% confirmed the presence of such issues. Among those, 13.1% attributed the problems to one of the parents, and 7.3% to a sibling, with the rest distributed among other relatives including uncles, aunts, and distant relatives.

Approximately 16.7% of the sample individuals observed regression in the skills their children had acquired prior to the pandemic, such as vocabulary loss, grammatical errors in sentence structures, the emergence of problems that were not present before the pandemic, and errors in speech sounds that were previously absent. Around 83.3% of the sample individuals did not notice any regression. Of those who observed regression, 17% attributed it to electronic device usage, and 13.6% to social isolation due to lockdown. The remaining percentages were attributed to various causes, including COVID-19 infection, genetic factors, environmental factors, child vaccines, and physical injuries as shown in figure (5).
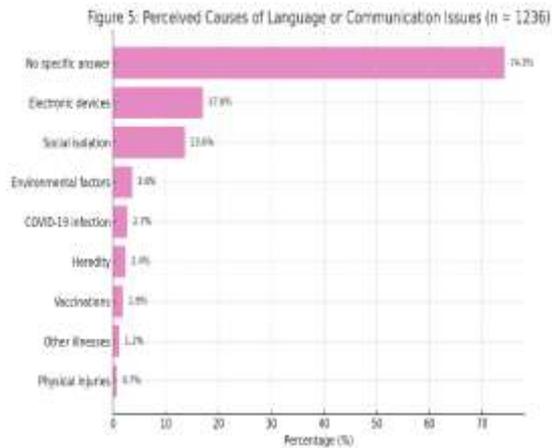


*Figure 4*

Figure 5: Perceived Causes of Language or Communication Issues (n = 1236)

*Figure 5*

About 54.6% of the sample individuals believed that despite the lockdown, their children managed to acquire necessary language skills. Of these, 48.1% attributed it to family interaction. E-learning played a role for 17.2% of the individuals, while the remaining percentages ranged from 8.3% to 13.6%, citing reading, social media, and television as contributors, as shown in figure (6).
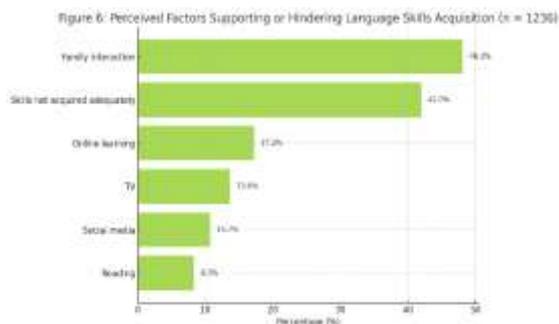


Figure 6: Perceived Factors Supporting or Hindering Language Skills Acquisition (n = 1236)

*Figure 6*

One Important limitation of this study is its reliance on parental reporting to assess children's language development and related behavioral changes. While parents are often the most consistent observers of their children's daily behaviors and communication skills, their reports may be influenced by subjective perceptions, emotional stress during the pandemic, or limited knowledge of developmental norms. This can lead to potential overestimation of problems due to heightened parental anxiety, or underestimation when delays are normalized or overlooked. Additionally, some parents may have lacked the tools or experience to accurately detect subtle speech or language issues, especially in younger children or those with limited verbal interaction during lockdowns. These factors should be considered when interpreting the findings, and future studies could benefit from incorporating objective assessments by speech-language professionals to complement self-reported data.

In response to the research question concerning whether the impact of the COVID-19 pandemic on language development differs by age group, the findings revealed no statistically significant differences among children of various age ranges. This suggests that the pandemic and its associated preventive measures had a general effect on children's language development regardless of age. A possible explanation is that children across different age groups were similarly exposed to factors such as social isolation, school closures, and reduced face-to-face interaction, which may have uniformly influenced their linguistic experiences.

With regard to gender-based differences, the results indicated no statistically significant variations between males and females in terms of the impact of the pandemic on language development. This finding implies that the environmental conditions resulting from the pandemic, including reduced social interaction and changes in educational routines, affected both boys and girls in a comparable manner. The lack of observed gender disparities supports the notion that the linguistic challenges posed by the pandemic were more related to situational and contextual factors than to biological or gender-specific characteristics.

### 4.1. Limitations

This study has several limitations that should be acknowledged. First, the data were collected through parental self-reports, which may be subject to recall bias and subjective interpretation, rather than clinical or professional assessments. Additionally, the study design is cross-sectional, limiting our ability to infer long-term developmental outcomes. Future research should consider longitudinal designs to track children's language development over time and incorporate clinical evaluations by speech-language professionals to validate and expand upon parental observations. Such approaches would provide a more comprehensive and objective understanding of the pandemic's lasting effects on early language development.

### 5. CONCLUSION

Through reviewing the previous results and analyzing the data, the researchers did not find a significant impact of the COVID-19 pandemic on children's language development in Jordan. This could be attributed to several factors specific to the Jordanian environment, as well as to the broader Arab contexts, including:

Firstly, Jordanian families typically consist of 3 to 8 members, with an average of 5 individuals per family. As a result, exposure to language within the family on a daily basis is substantial and extended throughout daylight hours.

Secondly, the Jordanian society often resides in areas where families are closely interconnected, contributing to individuals moving between neighboring homes and interacting with people outside their household environment. This fosters the development of linguistic, social, and communicative skills.

Thirdly, a significant factor that might explain the limited impact on children's language development in the Jordanian context is the high percentage of educated mothers within families. Besides caring for and nurturing their children, mothers are actively involved in their growth, engaging them in household activities that promote language and communication skills. Additionally, maternal education contributes to monitoring children's academic performance in schools, a trend that was noted during the COVID-19 pandemic.

Moreover, the parents' ability and proficiency in using electronic devices and social media, directing them towards beneficial resources for the family as a whole and children in particular, further enhances the situation.

Fourthly, educational institutions in Jordan have actively engaged electronic learning platforms and education through television channels, enabling children to continue their academic pursuits through these platforms at various times. This has also assisted parents in gaining a better understanding of effective academic teaching strategies and facilitating their implementation within the home environment.

**Note:** This research endeavor adheres rigorously to ethical guidelines. Every effort has been made to ensure the voluntary participation of all individuals involved in the research. Online, informed consent was acquired from each participant.

**Author Contributions:** All authors contributed to the conception or design of the work and the acquisition, analysis, or interpretation of the data. All authors were involved in drafting and commenting on the paper and have approved the final version.

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